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10/059,130	01/31/2002	Takahiro Ishihara	32739M072	5979

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EXAMINER	
DOTE, JANIS L	

ART UNIT	PAPER NUMBER
1756	5

DATE MAILED: 07/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/059,130	Applicant(s) ISHIHARA et al
	Examiner J. DOTE	Group Art Unit 1756

—Th MAILING DATE of this communication appears on th cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on 5/23/03.

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1 - 8 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1 - 8 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☒ All ☐ Some* ☐ None of the:

☒ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

1. This office action is responsive to applicants' response filed in Paper No. 4 on May 23, 2003. Claims 1-8 are pending.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-3 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,863,694 (Sano) combined with US 5,176,978 (Kumashiro).

Sano discloses a toner comprising toner particles having rounded surfaces. The toner particles comprise 100 parts by weight of a polyester binder resin, 8 parts by weight of carbon black, and an offset-preventative agent (i.e., releasant), wherein the releasant and colorant are dispersed in the binder resin. The toner has a volume average particle diameter of 9.1 μm or 8.2 μm and comprises 2.0 or 2.3% by volume, respectively, of toner particles having a particle size of 5 μm or less. See examples 1 and 2 in Table 1. The volume average particle diameters of 9.1 μm and 8.2 μm are within the range of 7 to 13 μm recited in instant claim 8. The amount of 8 parts by weight of carbon black is within the range of 8 to 13 parts by weight per 100 parts by weight of the binder resin recited in instant claim 7.

Sano does not disclose that its toner comprises a volume percentage of particles having a particle size of 5.04 μm or less as recited in the instant claims. However, as discussed above, Sano discloses that the toners comprise 2.0 or 2.3% by volume of particles having a particle size of 5 μm or less. The numerical values of 2.0 and 2.3 are with the range of 1.5 to 2.3% by volume recited in instant claim 3. Because the size difference between 5 μm and 5.04 μm is small and because the volume percentages of 2.0 and 2.3 are within the range of 1.5 to 2.3% by volume recited in instant claim 3, it is reasonable to presume that Sano's toners in example 1 and 2 comprise particles having a particle size of 5.04 μm or less in the amount recited in the instant claims. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Sano does not disclose that the releasant dispersed in the binder resin has an average particle size as recited in the instant claims. Sano does not limit the type of releasant used. Sano discloses that the releasant can be polyolefin waxes, such as low molecular weight polyethylene or polypropylene waxes. Col. 5, lines 18-27. The toners in Sano's examples 1 and 2 are obtained from a melt-kneading-pulverization method.

Kumashiro teaches toners comprising a wax consisting of a low molecular weight polypropylene and a particular high density polyethylene, wherein the wax is dispersed in the binder resin to

form domains having a size of 0.1 to 1.5 μm. Col. 1, lines 47-54. Kumashiro exemplifies toners comprising said wax domains having a size of 1.2 μm. See Table 1, example 4. The domain size of 1.2 μm and the upper domain size of 1.5 μm in the range of 0.1 to 1.5 μm are within the range of 0.9 to 2.5 μm recited instant claim 2. Kumashiro discloses that the size of the wax domains in the toners can be controlled by the addition of water in the melt kneading of the toner materials. Col. 7, lines 5-8. Kumashiro discloses that toners comprising its particular wax domains provide toner images that are "free from the occurrence of the stains and blurs due to rubbing of the developed images." Col. 1, lines 42-46, and Table 2, example 4. According to Kumashiro, said toners also prevent high-temperature offset and have improved storage stability, and no toner aggregation or coagulation. See Table 4, example 4, and col. 11, lines 38-45.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kumashiro, to use Kumashiro's wax as the releasant in the toners disclosed in Sano's examples 1 and 2, and to adjust the wax domain size, through routine experimentation as taught by Kumashiro, such that the resultant toners comprise wax domains having a size of 1.2 μm, which is within the range of 0.9 to 2.5 μm recited in instant claim 2. That person would have had a reasonable

expectation of successfully obtaining toners having improved storage stability and that provide images having the benefits disclosed by Kumashiro.

4. Claims 1-6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,976,754 (Asada) combined with Sano.

Asada discloses a toner comprising toner particles comprising 100 parts by weight of a fixing resin, 7 parts by weight of carbon black, 5 parts by weight of a particular releasing agent, a polyolefin wax having a melting point of not more than 120°C, and 2 parts by weight of a styrene-ethylene graft copolymer, a compatibilizing agent for the binder resin and the releasing agent. The polyolefin wax is dispersed in the fixing resin having an average particle diameter of 1.0 μm. See Table 1, example 5. The wax average particle size of 1.0 μm is within the range of 0.9 to 2.5 μm recited in instant claim 2. The amount of 2 parts by weight of the compatibilizing agent (i.e., wax dispersing agent) is within the range of 0.1 to 5 parts by weight per 100 parts by weight of binder resin recited in instant claim 5. Asada discloses that volume average particle diameter of the toner may be adjusted to 5 to 11 μm, preferably from 7 to 10 μm. Col. 5, lines 18-22. The volume average particle diameter of 7 to 10 μm is within the range of 7 to 13 μm recited in instant claim 8. Asada discloses that its toner has

superior blocking resistance and filming resistance and is capable of being fixed at low temperatures. Col. 1, lines 53-60; and Table 1, example 5.

Asada does not disclose that its toner has the particle size distribution recited in instant claim 1. Asada's toner in example 5 is obtained by a melt-kneading-pulverization-classification method.

Sano teaches toners comprising toner particles having rounded surfaces and having the following size distributions: $\log [Y] = 0.16X + k(2.4 \leq k \leq 2.7)$ and $5.0 \leq X \leq 11.7(\mu m)$, where wherein [X] represents the volume average particle size and [Y] represents % by number of particles of not more than 5 μm. Col. 2, lines 1-11. Sano discloses that the toner volume average particle is from 5.0 to 11.7 μm. Col. 2, lines 54-55. Sano exemplifies toners having a volume average particle diameter of 9.1 μm or 8.2 μm and comprising 2.0 or 2.3% by volume, respectively, of toner particles having a particle size of 5 μm or less. See examples 1 and 2 in Table 1. The volume average particle diameters of 9.1 μm and 8.2 μm are within the range of 7 to 13 μm recited in instant claim 8, and within the range 7 to 10 μm taught by Asada. Sano discloses that said toners can be obtained by classifying toners obtained by pulverization to a desired particle size, by using a classification-rotor classifier, or mixing such toners by means of a pulverizer

utilizing mechanical impact force. Col. 3, line 33, to col. 4, line 31. Sano discloses that said toners have good chargeability, provide less spent on carriers and charge giving members, and are suitable for use in image-forming apparatus of digital systems. Col. 1, lines 60-67. According to Sano, said toners also provide up to 10,000 excellent copies free from fog. See Table 2, examples 1 and 2.

Sano does not disclose that its toner comprises a volume percentage of particles having a particle size of 5.04 μm or less as recited in the instant claims. However, as discussed above, Sano discloses that the toners comprise 2.0 or 2.3% by volume of particles having a particle size of 5 μm or less. The numerical values of 2.0 and 2.3 are with the range of 1.5 to 2.3% by volume recited in instant claim 3. Because the size difference between 5 μm and 5.04 μm is small and because the volume percentages of 2.0 and 2.3 are within the range of 1.5 to 2.3% by volume recited in instant claim 3, it is reasonable to presume that Sano's toners in example 1 and 2 comprise particles having a particle size of 5.04 μm or less in the amount recited in the instant claims. The burden is on applicants to prove otherwise. Fitzgerald, supra.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Sano, to further process the toner in Asada's example 5 as taught by Sano such

that the toner comprises rounded surfaces, and to adjust through routine experimentation the volume average particle size of said toner such that the resultant toner has a volume average particle size of 9.1 or 8.2 μm and comprises 2.0 or 2.3% by volume of particles having a particle size of 5 μm or less to satisfy the particle size relationship taught by Sano. That person would have had a reasonable expectation of successfully obtaining a toner having the benefits disclosed by Sano.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Asada combined with Sano as applied to claim 1 above, further combined with additional teachings in Asada.

The combined teachings of Asada and Sano render obvious a toner as described in paragraph 4 above, which is incorporated herein by reference.

The amount of 7 parts by weight of carbon black in Asada's example 5 is outside the range of 8 to 13 parts by weight per 100 parts by weight of binder resin recited instant claim 7. However, Asada teaches that the amount of colorant is "not specifically limited, but is preferably set within a range from 3 to 15 parts by weight based on 100 parts by weight of the fixing resin." Col. 4, lines 14-16. Asada further teaches that "in the case that the colorant is carbon black, since carbon black itself has a conductivity, the amount of the colorant is

preferably set considering the electric characteristics of the toner into consideration [sic]." Col. 4, lines 16-21. Thus, it well-known in the art that the amount of carbon black is a result-effective variable, the variation of which is presumably within the skill of the ordinary worker in the art.

Accordingly, it would have been obvious to a person having ordinary skill in the art, in view of the teachings of Asada, to vary through routine experimentation the amount of carbon black in the toner rendered obvious over the combined teachings of Asada and Sano, such that the resultant toner comprises carbon black in an amount within the range recited in instant claim 7, because that person would have had a reasonable expectation of successfully obtaining a toner having the benefits disclosed by Asada and Sano, and having an increased conductivity.

6. Applicants' arguments filed in Paper No. 4 with respect to the rejections set forth in paragraphs 3-5 above have been fully considered but they are not persuasive.

Applicants argue that the combination of average particle diameter of the wax and the percentage by volume of toner particles recited in instant claim 1 prevents toner filming and hot offsetting. Applicants assert that none of the references, alone or in combination, recognizes the problems solved by applicants' claimed invention. Applicants assert that there is

no motivation provided in the prior art to combine the teachings of the prior art as suggested by the examiner and that the rejections are "based on improper use of hindsight."

In response to applicants' assert of improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Furthermore, the reasons for combining the references do not have to be those of applicants.

As discussed in paragraph 3, supra, Kumashiro teaches the advantages of using toners comprising its particular wax dispersed as particles having a particle size of 1.2 μm. Kumashiro discloses that one of advantages of using such toners is the prevention of high-temperature offset, which is one of reasons of applicants. Thus, Kumashiro provides ample reason, suggestion, and motivation for a person having ordinary skill in the art to use Kumashiro's particular wax dispersed as particles having a particle size of 1.2 μm in the toners disclosed by Sano.

In addition, Table 2 in Sano reports that after 10,000 runs, the toners in Sano's examples 1 and 2 were not visually observed on the surface of the photoconductor after passing the photoconductor through a cleaning blade. See Sano, col. 10, lines 61-65, and Table 2. In other words, Sano shows that the toners in Sano's examples 1 and 2 that meet Sano's particle size distributions, having a volume-average particle size of 9.1 or 8.2 μm and comprising 2.0 or 2.3% by volume, respectively, of toner particles having a particle size of 5 μm or smaller, do not cause "filming" of the photoconductor after 10,000 runs. Said prevention of "filming" meets applicants' other reason for their invention. Thus, the combined teachings of Sano and Kumashiro teach the two properties sought by applicants' invention. In addition, as discussed in the rejection in paragraph 3, supra, the examiner has provided ample reasons to presume reasonably that the toners in Sano's examples 1 and 2 comprise particles having a particle size of 5.04 μm or less in the amount recited in the instant claims. Applicants have not come forward with any objective evidence to prove otherwise, and have therefore have not met their burden. Accordingly, for the reasons discussed above and in the rejection set forth in paragraph 3, supra, the combined teachings of Sano and Kumashiro render obvious the toner recited in the instant claims.

As discussed in paragraph 4, supra, Asada teaches that its toner in Asada's example 5 comprising dispersed wax particles having an average particle size of 1.0 μm has superior filming resistance. In addition, Table 1 in Asada reports that when the toner in Asada's example 5 was fixed at 190°C, no hot offset was observed. Table 1 reports that hot offset was observed at 230°C. Thus, Asada's toner appears to possess both properties sought by applicants. As discussed in paragraph 4, supra, Sano teaches the advantages of using toners that meet its particle size distributions, having a volume-average particle size of 9.1 or 8.2 μm and comprising 2.0 or 2.3% by volume, respectively, of toner particles having a particle size of 5 μm or smaller. Thus, Sano provides ample reason, suggestion, and motivation for a person having ordinary skill in the art to further process the toner in Asada's example 5 as taught by Sano to satisfy Sano's particle size distributions. In addition, as discussed above, Sano shows that such toners do not cause "filming" of the photoconductor after 10,000 runs. Thus, the combined teachings of Asada and Sano also teach the two properties sought by applicants' invention. Accordingly, for the reasons discussed above and in the rejections set forth in paragraphs 4 and 5, supra, the combined teachings of Asada and Sano render obvious the toner recited in the instant claims.

7. **THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (703) 308-3625. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (703) 308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9311 (Rightfax) for after final faxes, and (703) 872-9310 for other official faxes.

Any inquiry of papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Palestine Jenkins, whose telephone number is (703) 308-3521.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Janis L. Dote
JANIS L. DOTE
PRIMARY EXAMINER
GROUP ~~1500~~ 1700

JLD
July 21, 2003